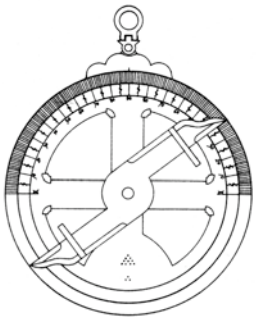

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P.O. Box 2494
Washington
North Carolina 27889

21 January 2008

Mr. Ken Willson
Coastal Planning & Engineering of North Carolina, Inc.
330 Shipyard Boulevard
Wilmington, North Carolina 28412

Dear Mr. Willson:

Enclosed please find three copies of our final report entitled *A Submerged Cultural Resource Remote-Sensing Survey for a Borrow Area located off North Topsail Beach, Onslow County, North Carolina*. We addressed corrections and additions that you requested in reference to the draft document. Each report includes a CD with both a Microsoft Word and a PDF version of the document.

On behalf of Tidewater Atlantic Research, we appreciate the opportunity to work with CPE of NC in conjunction with the current North Topsail Beach project and look forward to future investigations.

Best regards,

Robin Arnold

Enc.

A Submerged Cultural Resource Remote-Sensing Survey for a Borrow Area Located off North Topsail Beach Onslow County, North Carolina

Submitted to:

Coastal Planning & Engineering of North Carolina, Inc.
330 Shipyard Boulevard
Wilmington, North Carolina 28412

Submitted by:

Tidewater Atlantic Research, Inc.
Post Office Box 2494
Washington, North Carolina 27889

21 January 2008

Abstract

Coastal Planning and Engineering of North Carolina, Inc. (CPE-NC) of Wilmington, North Carolina is currently working with North Topsail Beach officials to identify sand sources for a beach nourishment project on North Topsail Beach. In order to determine the project's impacts on potentially significant submerged cultural resources, CPE-NC contracted with Tidewater Atlantic Research, Inc. (TAR) of Washington, North Carolina to conduct a systematic magnetometer and side-scan sonar survey of two sections of a proposed offshore borrow area that had not previously been surveyed for cultural resources. A portion of the North Topsail Beach Borrow Area was previously surveyed by Mid-Atlantic Technology and Environmental Research (MATER) as part of a feasibility study carried out by the U.S. Army Corps of Engineers, Wilmington District (USACE-W). The remote-sensing survey carried out by TAR was designed to locate and identify magnetic and acoustic anomalies that could represent submerged cultural resources in the study area and generate sufficient data to support an initial assessment of historical and archaeological significance. Field research was conducted on 8 and 9 October 2007. Analysis of the remote-sensing data revealed no magnetic and/or acoustic anomalies in either of the borrow area sections. As there is no remote-sensing evidence of submerged cultural resources in the North Topsail Island Borrow Area surveyed by TAR or previously investigated by MATER, no additional investigation is recommended in conjunction with the proposed project.

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Introduction

Coastal Planning and Engineering of North Carolina, Inc. (CPE-NC) of Wilmington, North Carolina is currently working with North Topsail Beach officials on a project to identify sources of beach nourishment sand offshore of North Topsail Beach. In order to determine the project's impacts on potentially significant submerged cultural resources, CPE-NC contracted with Tidewater Atlantic Research, Inc. (TAR) of Washington, North Carolina to conduct a systematic magnetometer and side-scan sonar survey of two sections of a proposed borrow area not previously surveyed for submerged cultural resources. A portion of the proposed North Topsail Beach Borrow Area was previously surveyed by Mid-Atlantic Technology and Environmental Research (MATER) as part of a feasibility study carried out by the U.S. Army Corps of Engineers, Wilmington District (USACE-W)

The TAR investigation was designed to provide accurate and reliable identification, assessment and remote-sensing documentation of submerged cultural resources within the proposed borrow sites. The survey methodology was developed to comply with guidelines for submerged cultural resource surveys in North Carolina created by the North Carolina Department of Cultural Resources. Those guidelines follow the criteria established by the National Historic Preservation Act of 1966 (Public Law 89-665), the National Environmental Policy Act of 1969 (Public Law 11-190), Executive Order 11593, the Advisory Council on Historic Preservation Procedures for the protection of historic and cultural properties (36 CFR Part 800) and the updated guidelines described in 36 CFR 64 and 36 CFR 66. The results of the investigation will furnish CPE-NC with the archaeological data required to comply with submerged cultural resource legislation and regulations.

Prior to the fieldwork, cartographical and historical documents available in the TAR library were reviewed and organized to provide a proper framework for submerged cultural resource assessment in the North Topsail Beach area. Field research was conducted on 8 and 9 October 2007. All remote-sensing operations were carried out from a 25-foot survey vessel. Magnetic data was generated by a GEOMETRICS 881-cesium vapor magnetometer and acoustic data by a MARINE SONICS 600 kHz side-scan sonar. A TRIMBLE AgGPS system was employed to provide sub-meter positioning and vessel navigation and data collection was controlled by HYPACK survey software.

Project personnel consisted of principal investigator Gordon P. Watts, archaeologist/remote- sensing operator Harry Pecorelli and archaeological assistant Adam Browne. Dr. Watts and Ms. Robin Arnold prepared the report for production.

Project Location

The North Topsail Island borrow areas lie offshore of Sea Haven Beach in Onslow County, North Carolina (Figure 1). The larger, northern borrow area lies approximately one statute mile offshore and consists of a polygon 8,300 feet in length and 5,000 feet at its maximum width (Figure 2).

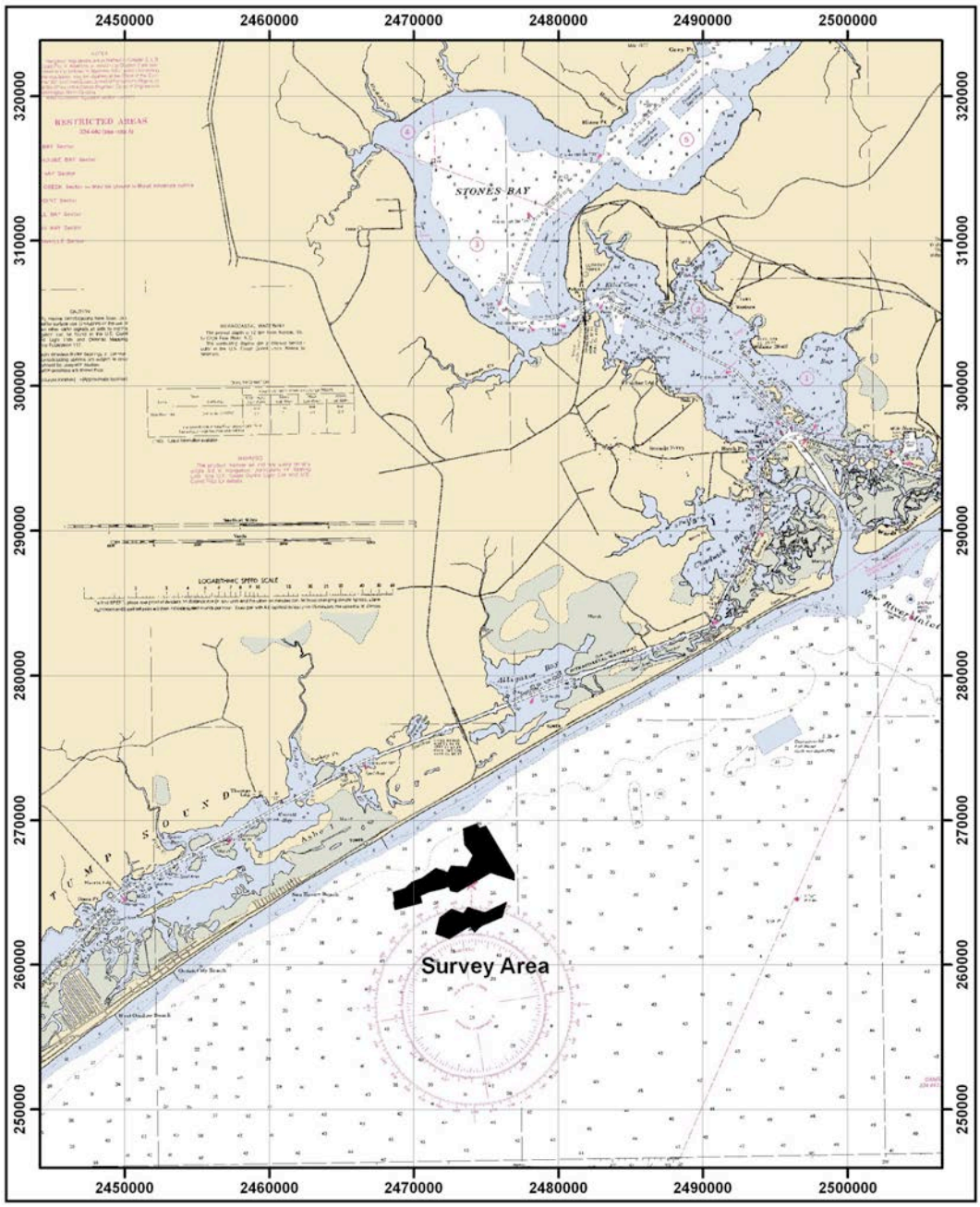

Figure 1. Project location map (NOAA Chart 11539 New River Inlet to Cape Fear).

Water depth in the northern survey area ranges between 30 to 36 feet. Coordinates for the northern survey area in North Carolina State Plane, NAD 83 are:

Position	Easting	Northing
1	2468760.17	263835.70
2	2470559.92	264302.73
3	2470446.01	264792.53
4	2471072.51	265077.30
5	2471869.87	265270.95
6	2472473.58	265441.81
7	2472553.32	265145.65
8	2473008.95	265043.13
9	2475332.68	266398.64
10	2476938.79	265874.66
11	2476950.18	266307.51
12	2474968.18	269599.47
13	2474546.71	269439.99
14	2474364.46	269747.55
15	2473430.41	269417.21
16	2473544.32	268335.08
17	2474113.86	267583.29
18	2473715.18	266751.76
19	2472587.49	266831.49
20	2472359.67	266375.86
21	2471539.53	266672.02
22	2470571.31	265977.18
23	2469944.82	265760.75
24	2469819.52	265658.24
25	2469432.23	265305.12
26	2468600.70	265008.96
27	2468680.43	264507.76
28	2468623.48	264291.34
29	2468703.21	263858.48
30	2468760.17	263835.70

The smaller, southern survey area lies approximately one and one-half statute miles offshore and consists of a polygon 5,300 feet in length and 1,800 feet at its maximum width (Figure 2). Water depth in the southern survey area ranges between 34 to 36 feet. Coordinates for the southern survey area in North Carolina State Plane, NAD 83 are:

Position	Easting	Northing
1	2476405.98	264314.64
2	2476111.53	263319.96
3	2474659.09	262716.22
4	2474203.81	262280.74
5	2473941.53	262674.16
6	2473664.41	262555.39
7	2472456.93	261815.56

Position	Easting	Northing
8	2471526.57	262154.54
9	2471811.12	263265.52
10	2472627.66	263859.37
11	2473431.82	263542.65
12	2473760.91	263985.56
13	2473760.91	263973.19
14	2474904.05	263594.61
15	2476405.98	264314.64
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17	2476311.95	264203.30

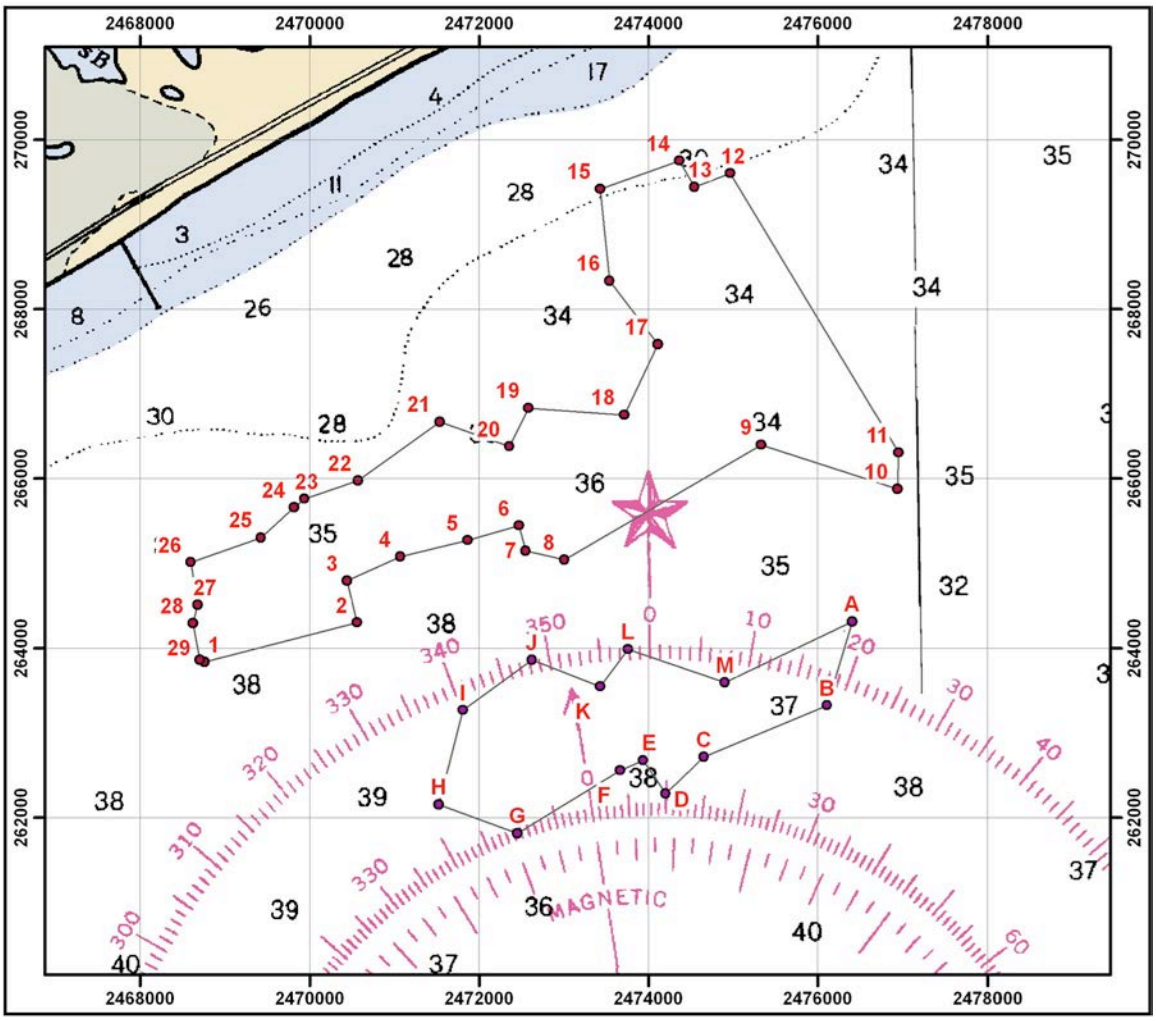

Figure 2. North and south survey area configurations (NOAA Chart 11539 New River Inlet to Cape Fear).

Research Methodology

Literature and Historical Research

Due to the number of previous investigations conducted off Topsail Island, TAR personnel have carried out extensive literature searches in both primary and secondary source material. To assess the potential for finding significant historic and/or cultural resources within the proposed borrow area TAR personnel reviewed previously collected literature, examined historical maps and charts and examined inventories of shipwrecks in the Topsail Island area. The historical background in this document is built upon and refined from previous historical background assessments of the region developed by TAR.

Preliminary wreck-specific information was collected from primary and secondary sources that include: *The Encyclopedia of American Shipwrecks* (Berman 1972); *Merchant Steam Vessels of the United States 1790-1868* (Lytle and Holdcamper 1975); *Shipwrecks of the Civil War: The Encyclopedia of Union and Confederate Naval Losses* (Shomette 1973); *Shipwrecks in the Americas* (Marx 1983); *Shipwreck Encyclopedia of The Civil War: North Carolina, 1861-1865* (Spence 1991); *Shipwrecks of North Carolina* (Gentile 1992); *Naval Documents of the American Revolution* (U.S. Navy [10 vols.] 1964-1996); *The Naval War of 1812: A Documentary History* (Dudley [two vols.] 1985); *Graveyard of the Atlantic* (Stick 1952); *Naval History of the Civil War* (Porter 1985), *Official Records of the Union and Confederate Navies in the War of the Rebellion* (The National Historical Society [31 vols.] 1987) and other published materials. A survey of selected North Carolina newspapers and the *Wreck Information List* of the U.S. Hydrographic Office generated additional information.

Personnel at the Underwater Archaeology Unit of the Division of Archives and History (UAU) at Kure Beach, North Carolina were also contacted for shipwreck data associated with the Topsail Island area.

Remote-Sensing Survey

Field investigation of the study area was designed to accomplish two major research goals. The first was to employ magnetic and acoustic remote-sensing equipment to identify anomalies with signature characteristics similar to those previously demonstrated to be associated with historically significant submerged cultural resources. The second objective was to assess each target signature and identify those that required avoidance procedures and those that could be dismissed as indicative of modern debris. To accomplish these objectives, TAR personnel collected data with a cesium vapor magnetometer and a 600 kHz side-scan sonar. A 100-foot line spacing was utilized throughout the survey.

All survey activities were conducted from the 25-foot survey vessel *Tidewater Surveyor* (Figure 3). In order to fulfill the requirements for survey activities in the State of North Carolina, magnetic and acoustic remote-sensing equipment was employed. This

combination of remote-sensing equipment represents the state of the art in submerged cultural resource location technology and it offers the most reliable and cost effective method to locate and identify potentially significant targets. Data collection was controlled using a differential global positioning system (DGPS). DGPS produces the highly accurate coordinates necessary to support a sophisticated navigation program and assures reliable target location.

Figure 3. TAR project support vessel *Tidewater Surveyor*.

Magnetic Remote-Sensing

An EG&G Geometrics G-881 marine cesium magnetometer capable of plus or minus 0.001 gamma resolution was employed to collect magnetic data in the survey areas (Figure 4). To produce the most comprehensive magnetic record, data was collected at 10 samples per second. The magnetometer sensor was towed approximately 15 feet below the water surface at a speed of approximately three to four knots. Magnetic data were recorded as a data file associated with the computer navigation system. Data from the survey were contour plotted using QUICKSURF software to facilitate anomaly location and define target signature characteristics. All magnetic data were correlated with the acoustic remote-sensing records.

Acoustic Remote Sensing

A 600 kHz MARINE SONICS high-resolution side-scan sonar was employed to collect acoustic data in the survey area (Figure 5). The side-scan sonar transducer was deployed and maintained approximately 7 to 10 feet below the water surface. Acoustic data were collected using a range scale of 50 meters (164 feet) to provide 150% coverage and high target signature definition. Acoustic data were recorded as a digital file and tied to the magnetic and positioning data by the computer navigation system.

Figure 4. Deploying the cesium vapor magnetometer.

Figure 5. MARINE SONICS high-resolution side-scan sonar.

Positioning System

During the survey, positioning and lane spacing were maintained with a TRIMBLE AgGPS differential system interfaced with a COMPAQ 2.4 GHz laptop. Navigation was controlled and data recorded by HYPACK software (Figure 6). This navigation system affords a positioning accuracy of plus/minus 3 feet. The positioning system was preset with a -45 foot forward and -3 foot port layback for the magnetometer and -5 feet forward and 3 feet starboard layback for the side scan sonar. Data generated was correlated to remote sensing records by annotations to facilitate target location and anomaly analysis. Annotations included lane number, date, coordinates, event marks every 100 feet and target identification. All data are plotted to North Carolina State Plane Coordinate System, NAD 83.

Figure 6. Computer navigation system located at the research vessel helm.

Data Analysis

To ensure reliable target identification and assessment, analysis of the magnetic and acoustic data was carried out as it was generated. Using QUICKSURF® contouring software, magnetic data generated during the survey were contour plotted at 5-gamma intervals for analysis and accurate location of magnetic anomalies. The magnetic data was examined for anomalies that were isolated and analyzed in accordance with intensity, duration, areal extent and signature characteristics.

Sonar records were analyzed to identify targets on the basis of configuration, areal extent, target intensity and contrast with background, elevation and shadow image, and were also reviewed for possible association with identified magnetic anomalies.

Data generated by the remote-sensing equipment were developed to support an assessment of each magnetic and acoustic signature. Analysis of each target signature included consideration of magnetic and sonar signature characteristics previously demonstrated to be reliable indicators of historically significant submerged cultural resources. Sub-bottom data was also assessed for relict channels and the potential for prehistoric resources. Assessment of each target includes avoidance options and possible adjustments to avoid potential cultural resources. Where avoidance is not possible the assessment will include recommendations for additional investigation to determine the exact nature of the cultural material generating the signature and its potential *National Register (NR)* significance. Historical evidence was developed into a background context and an inventory of shipwreck sites to identified possible correlations with anomalies (Appendix A). A magnetic contour map of each survey area was produced to aid in the analysis of each target.

Historical Background for Coastal Onslow County

Europeans initially surveyed the coast of contemporary Onslow County during the first quarter of the sixteenth century. In 1524, Giovanni da Verrazzano dispatched sailors to meet aboriginals somewhere between New River and Bogue inlets. The Florentine navigator was engaged by Francis I to explore the American coast from North Carolina to Maine and described the coastline in journals related to his surveys. Some 60 years later, according to Ralph Lane's chronicles of Sir Richard Grenville's expedition and John White's map [1585], Englishmen with the support of navigator Simon Fernando fished in Onslow County waters on their way to establish a colony on Roanoke Island. Although Grenville and his companions disliked the Portuguese pilot, the ex-pirate was the "only skilled navigator alive with previous experience in negotiating the treacherous Carolina coastline" (Glasgow 1966:120-121). Before John White arrived at Roanoke Island in 1587 to search for what today is known as the Lost Colony, his vessels probably anchored at Onslow's barrier islands. From White's last visit to the North Carolina coast in 1590 to the beginning of the eighteenth century Europeans may have settled the Onslow County area, although they left no physical evidence.

Settlement along the New River drainage basin dates to the first quarter of the eighteenth century. According to *The North Carolina Gazetteer*, New River appeared as the Corani River on the 1729 Moll map and as New River on the 1733 Moseley map. The name New River Inlet also appeared on Moseley's chart (Powell 1968:350). Development began with an influx of English and Scottish settlers followed by Welsh and Irish colonists. The majority of these early settlers came by way of other American settlements, including a large number of families from the Albemarle region of North Carolina. There were also settlers who migrated south from Maryland, Virginia and the New England colonies. The first land grants made to attract settlers to New River were

for tracts located on the sounds, rivers and major creeks, as the waterways provided the most convenient arteries of transportation and trade. New River became one of the centers of early settlement much like other rivers up and down the eastern seaboard. The concentration of people along the river and its adjoining waterways prompted the construction of small craft utilized for local transportation. Dugout cypress canoes were among the first vessels built in the New River area. By the mid-eighteenth century, colonists also constructed cunners, rowboats, canoes, periaguas and small sailing vessels.

A September 1716 land grant made to Richard Anderson appears to be the first documented tract actually located along the New River. The conveyance implies that the place name New River was in use prior to the execution of that document (Littleton 1981:26, 33). As early as 1714, North Carolina Chief Justice Christopher Gale received a grant of 750 acres located between Bear and Brown inlets. Justice Gale, like many early New River landowners never occupied the property and subsequently sold his parcel to Phillip Dexter (Onslow County Register of Deeds [OCRD] 1:25). Dexter had also received a grant for 640 acres on the west side of the mouth of Bear Creek. With his two brothers, Ebenezar and Hope, Phillip Dexter began to develop property along New River (Gwynn 1961:64).

Although initial population growth was slow, due at least in part to land speculation, a steady influx of colonists commenced circa 1720. By mid-November 1723, Charlesworth Glover acquired approximately 310 acres on the east side of New River. In May 1726, Hope Dexter received a grant for 640 acres of land along a tributary off New River called Mittum's [or Mittam] Creek. Prior to willing 320 acres of that tract to his brother Phillip in 1746, Hope moved to establish the town of Johnston there (Gwynn 1961:125). Within three months, a 60-acre tract on the east side of New River was granted to William Lewis, Jr. (Littleton 1981:34). Another 1726 deed identified a New River landowner named Charles Harrison. Harrison's deed for property along the west side of the mouth of New River referred to its former owner, Captain William Stone. At about the same time, 420 acres were granted to a Mary Lillington. Official records revealed that Mary Lillington had two resident neighbors, Stephen Howard and Andrew Clark (Littleton 1981:35). The Edward Moseley map [1733] shows the M. Lillington homestead situated along the New River.

By 1733, settlers from Bertie County increased the number of area residents to approximately 100 families (Lefler and Newsome 1963:72). Although waterways provided the major avenue of trade and transportation for early New River settlers, a roadway was cleared to connect the New River with New Bern on the Neuse River and Brunswick Towne on the Cape Fear River. Work must have been well underway by 1726, for in that year the Carteret court appointed Edmund Ennett as overseer for the segment connecting New River with the intersection of a cross path that led to the White Oak River. Ennett had previously resided along Brice's Creek and may have purchased New River property by 1723. The freeholder/juryman was also empowered by the Carteret court to operate a ferry service on New River just south of the mouth of Kisable Creek [contemporary Everett's Creek] where the roadways originated (Littleton 1981:37; North Carolina Division of Archives and History [NCDAH] 1728).

Another ferry landing located along the lower New River was utilized by 1731. During mid-November 1731, John Williams conveyed Ferry Point Plantation to Christian Heidelberg. Court documents suggested that Heidelberg resided on the 400-acre parcel and operated the Ferry Point landing before the transfer. The 1733 Moseley map illustrated the location of the "Heidelberg Ferry," while the 1738 Wimble chart simply identified the "Ferry" site (Figure 7). Although Heidelberg moved to another plantation on Stone's Bay, he continued to manage the ferry operation until his death circa 1741 (Littleton 1981:38, 60).

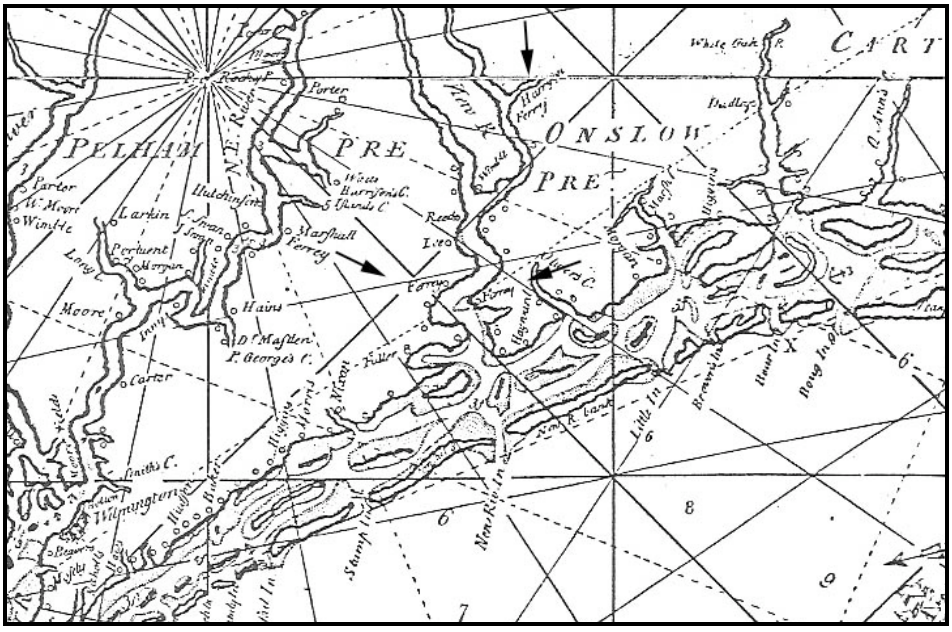

Figure 7. New River Ferry and inlet locations along the Onslow Coast identified on the Wimble 1738 map (Littleton 1981:39).

John Brickell surveyed North Carolina's barrier islands in 1729 and commented on the nature of New River Inlet, as well as nearby inlets subsequently identified on the 1738 Wimble chart (Figure 7). In *The Natural History of North Carolina*, the Irish physician wrote: "Between the Islands and Sand Banks, are Inlets of several depths of Water, some admitting only of Sloops, Schooners, Brigantines, and Vessels of small Burthen, and such [inlets] are…Bogue Inlet, Bear Inlet, Brown's Inlet, Little Inlet, New River Inlet, Stumpy Inlet, Sandy Inlet, and Rich Inlet…many of these being only Navigable for Periaugers and small Crofts, by reason of their many Shoals which are continually shifting by the violence of Storms, and particularly, North East Winds" (Brickell 1968[1737]:2). Brickell's observations were supported by Captain James Wimble's navigational chart of 1738. The New Carthage [Wilmington] cartographer identified the depth of the New "Rever" channel at only five feet and noted that passages along some inlets were only suitable for "Conoas" and a "petaugo" (Cumming 1969:34).

In early 1731, the inhabitants of Topsail, New River and White Oak petitioned Royal Governor George Burrington to form a new precinct to make court functions and attendance less of a strenuous undertaking (Littleton 1981:43). On 23 November 1731, Governor Burrington, in conjunction with His Majesty's Council, issued an executive order to establish Onslow Precinct from portions of Carteret and New Hanover Precincts. Although the North Carolina Colonial Assembly refused to acknowledge establishment of Onslow Precinct at the 1733 Edenton assembly, the functions of local government continued until recognition was granted the following year (Conner 1919:144). Court sessions initially held in a private residence were shifted to a public structure following the construction of a suitable building on Jarrott's Point.

By 1739, Onslow Precinct was elevated to county status and the town laid off on Hope Dexter's Mittum Creek tract was incorporated in 1741 (Littleton 1981:2). Located approximately 14 miles upstream from New River Inlet, Johnston was established by the colonial assembly in an "Act to lay out a town on or near Mittam's Point on New River by the name of Johnston." The act called for convenient streets, a square for public buildings and confirmed that lots would be available for ten shillings to anyone willing to build a "good substantial habitable framed house" within two years. Town justices were empowered to levy a tax of up to eight pence per year per poll to defray the cost of a courthouse structure. After New River's second courthouse, which had been constructed on Paradise Point, burned in 1744 all county functions were moved to Johnston. However, efforts to construct a new public structure were unsuccessful and sessions were held in private residences until a hurricane destroyed the entire town in September 1752. For five years, court was held at the residence of Jonathan Melton on the northeast branch of New River. Johnston, the first seat of Onslow County government, was never rebuilt.

When the town of Johnston was destroyed in 1752, the population of Onslow County had increased significantly and settlers had pushed well inland along the various branches of New River. As Johnston was no longer considered a suitable and convenient location for the seat of county government, New River settlers pressed for a change in location. A bill to repeal the act that established Johnston as the seat of county government was passed in 1755. That same act designated Wantland's Ferry as the new location for the county courthouse and directed the Onslow justices to erect a new structure complete with pillory, prison and stocks within six months.

In January 1756, James Wantland agreed to provide the Onslow County Magistrate Justices with one acre of land in the vicinity of the ferry landing on his plantation. Wantland's acre was to be convenient to the river and a spring and would provide a suitable location for the proposed courthouse. Adjacent to the site, the justices were to design a town composed of small lots that would be sold for 20 shillings each. Formal plans for the town continued and in July 1757, the court ordered the Commissioners of Roads "do lay out and make a road from the southwest Bridge to the ferry opposite Wantlands and from Wantlands the nearest best way to the Northeast Bridge and Northwest of each side." Also in that month, rates for the ferry were established: 6 pence

for man and horse and 4 pence for a pedestrian and the county treasurer was ordered to pay the ferryman for the passage of jurors and justices from tax revenues (NCDAH 1757).

By 1759, Richard Whitehurst sold the New River lower ferry property to son-in-law Robert Snead. Snead operated the ferry on the north side of the river throughout the Colonial period and resided at Ferry Point (Littleton 1981:60). Contemporary land records [1764] related that the entrepreneur also managed a tavern and ordinary for travelers. Another New River resident was also licensed to operate a tavern near his landing on the south side of the river. John McKinney managed the lower ferry from 1768 until 1770, when the venture was renamed as the Lewis Ferry (Littleton 1981:61). From all accounts, the Colonial period ferries at New River were simple in design and in construction. Snead's primitive vessel was "described as an [sic] 'ordinary bauble' which floated no more than two or three inches above the water" (Littleton 1981:61).

Onslow County's economy during the Colonial period was based primarily on forest products, agriculture and fishing. Naval stores, the extraction of tar, pitch and turpentine from the coastal pine forests, were the region's chief exports. North Carolina placed first among the British colonies in production of this lucrative commodity and Onslow County ranked as high as fourth within the colony. Small farms dominated agricultural settlements during the period because the region's sandy soils and shallow inlets and rivers inhibited the development of a plantation system. Corn and peas constituted the principal consumables, while rice, indigo, flax, cotton, hemp, fruits and other vegetables were harvested on a smaller but significant scale (Louis Berger Group [LBG] 2002:8). An account ledger kept by New River merchant Robert Hogg confirmed that affluence for most Onslow slaveholders was generated from the sale of naval stores, hides and pickled beef and pork (Littleton 1981:65).

Other merchants that owned and/or operated New River interests were Gibbeon Jennings, Edward Ward, Richard Ward, James Howard, Richard Farr, William Gibbs and French & Cray [Joseph French, Jr. and William Cray, Sr.] (Littleton 1981:70-72). When the ship *St. Andrew* arrived at Beaufort in October 1759, the vessel's agent was identified as Richard Farr of New River. According to the *North Carolina Gazette*, Farr exchanged local goods that included tar, deerskins and fur for manufactured goods from London. Shipping records also indicated that the sloop *Cynthia* regularly carried naval stores to Wilmington and Brunswick, and returned to New River with cargoes of "sugar, rum, salt, hardware, and general merchandise" (Littleton 1981:71).

Grist milling constituted another major industry in Onslow County. Mills were in operation in a number of places along the New River basin including French Creek, Wallace's Creek and the area between Stone's Creek and Southwest Creek (Littleton 1981:66). New River residents who owned mills included Christian Heidelberg and William Hadnot. Fishing and whaling provided area residents with supplemental income on a seasonal basis. Several early and mid-eighteenth-century wills probated in Onslow County listed bequests of whale boats and/or whaling gear (Littleton 1981:68). As a

consequence of these industries, inspection laws enacted in 1755, 1758 and 1764 named New River Inlet, Bear Inlet and Bogue Inlet as official export locations (Littleton 1981:68).

The reliance on water for transportation and trade prompted sporadic attempts to improve navigation on New River. The Colonial legislature passed some initiatives to artificially deepen the river in 1741, 1760 and 1761. Because the depth of water through Bear Inlet was greater than that at New River Inlet [8 to 11 feet versus 3 to 5 feet] efforts were directed toward improving navigation from Howard's Bay, near the mouth of New River to Bear Inlet. Advocates of the 1760 legislation desired funding to "allow loaden pettiaguas and other boats of 50 barrels burthen to pass and repass from New River to Bear Inlet." During the following year, three commissioners [who were New River property owners] raised funds to clear and remove rock or shell, and cut through the marsh that fronted New River Inlet (Littleton 1981:69, 70; Watson 1995:17). Overall, those projects were largely unsuccessful and navigation remained problematic for the rest of the eighteenth century and well into the nineteenth century.

The New River area was not impacted, to a large extent, by the activities of the American Revolution. However, many prominent New River landowners and merchants were involved in the political events leading to the war and subsequent military actions. Prior to the Declaration of Independence, two principals of French & Cray, William Cray and Joseph French, joined New River merchants Seth Ward, Edward Ward and Robert Snead to serve on the Onslow Committee of Safety in April 1775. One of the committee's first and primary responsibilities was to enforce the ban on sales of local naval stores to the British (Littleton 1981:102-103). Although Parliament had exempted North Carolina from the Restraining Act of 1775 that prohibited colonial trade with Great Britain and the West Indies, the Continental Congress recognized the significance of the exclusion. The colonies of North Carolina, Georgia and New York were the main producers of naval stores and the Royal Navy needed those commodities. Therefore, the Committee of Safety's ban on selling naval stores to England would strengthen the American cause.

In April 1776, the Fourth Provincial Congress approved plans to raise five independent companies to protect the American seacoast. One company was tasked to patrol the area between Bogue Inlet and New River, while a second unit was assigned to patrol the area south of New River to Deep Inlet. By late November 1776, Captain Selby Harney's Bogue Inlet-New River company was disbanded and that section of the coastline was left unprotected (Littleton 1981:104-105). As the first anniversary of the signing of the Declaration of Independence passed, Onslow justices ordered all suspicious persons and avowed Tories to profess allegiance to the new government. According to court documents, five Tories were arrested at New River and were executed at Kinston (Littleton 1981:105).

In December 1778, the French vessel *Conquerant,* a British prize, entered Little Inlet [located between New River and Brown's Inlets; open to navigation until the late nineteenth century (Littleton 1981:41)] after it separated from the British fleet during a severe storm. After crossing the inlet in a smaller boat, the British disembarked near the

mouth of Gillett's [Gillets] Creek to search for rations. Unfortunately for the Royal Navy detachment, New River merchant William Hadnot was present at the site to tend his salt works (Littleton 1981:111). Other New River residents soon assembled and the British seamen were arrested. The disposition of the *Conquerant* and its cargo was later argued at an admiralty court at Bogue [Swansboro] (Littleton 1981:105).

British forces did not seriously threaten the safety of New River residents until 1781 when Wilmington was occupied. The British presence there disrupted travel along the North Carolina coast and enemy troops pillaged the surrounding countryside. In February 1781, Colonel Mitchell dispatched Onslow soldiers to the lower Cape Fear region to assist American efforts to repel the British. During that same month, North Carolina officials decided to resume coastal defense patrols, and mustered troops to defend the coastline of Onslow County and to fortify the mouth of the White Oak River.

In mid-July 1781, American General Alexander Lillington reported that British forces had sacked the homesteads of several New River Chapel residents but that the enemy had returned to Rutherford's Mill [Northeast Cape Fear]. In August, the British revisited the New River region and occupied the plantation of Lewis Williams (Littleton 1981:107). Locals were then warned that the British intended to destroy all area salt works. The import of salt had been virtually curtailed during the war, and many New River residents had resorted to boiling seawater to obtain that valuable product. For unknown reasons, the Onslow salt works were spared. After Cornwallis surrendered at Yorktown on 19 October 1781, British soldiers evacuated Onslow County and the whole of North Carolina.

Although the courthouse generated a variety of activities at James Wantland's Ferry, development after the war was measured. The first structures in the immediate vicinity of the courthouse and ferry were ordinaries established to provide accommodations when court was in session. Ordinaries were also established at convenient points along most of the major roadways in the colony. In July 1784, Bannister Lester was appointed Public Inspector "above the forks of New River, also Courthouse landing and opposite side" (NCDAH 1784). Samuel Simmons was appointed to continue the service as Public Inspector of Naval Stores "at Courthouse Landing" in 1791 (NCDAH 1791). Designating Wantland's Ferry as an inspection port no doubt increased public activity as New River vessels carried out an extensive coastal trade. Other inspection ports were located at Bogue Inlet, Bear Inlet, New River Inlet (1755, 1758 and 1764), Week's Landing [Swansboro], French's Landing [Frenchs Creek] and Todd's Landing (1770) (Littleton 1918:68). An inspection law enacted in 1784 listed numerous exports from the New River region that included "beef, pork, rice, tar, pitch, turpentine, fish, flour, butter, flax seed, staves, heading, sawed lumber, and shingles" (Littleton 1981:111). Within two years, the North Carolina Assembly passed legislation to place Bogue, Bear, and New River Inlets within a new customs district that was named Port Swansborough. At that time, New River merchant Robert Snead was also appointed as a judge for the port's maritime court (Littleton 1981:113).

Swansboro's importance as a shipping center led to the North Carolina legislature designating the town as a state port in 1787. The value of trade entering the port, however, was never very large. Shipping records for the period 1 July 1789 to 10 March 1790 revealed that only 22 sloops and schooners entered the port (Watson 1995:55). Most of this trade was from South Carolina merchants. Exports included naval stores, wood products, tobacco, cotton and foodstuffs such as bacon, pork, chickens, corn, peas and other produce. Area merchants also found markets for natural resources like beeswax, snakeroot, deerskins and fish. Imports consisted of salt, molasses, rum, dry goods and foodstuff not produced locally. Prior to the War of 1812, merchant Christopher Dudly [or Dudley] conducted a brisk trade based at New River. On 9 March 1799, the schooner *Sally* wrecked east of New River bar during a return trip from Charleston. According to historian Wilson Angley, artifacts that included late-eighteenth-century money and merchants' seals were discovered at the probable wreck-site during the early 1980s (Angley 1982:2).

Prior to 1800, a salt manufacturing facility may have been constructed on an islet later called Wright Island. Documents revealed that William Montfort and three other gentlemen "purchased an unnamed island near the mouth of the New River" during the 1790s. A later reference to Montford's Landing suggested that the saltworks was located at the mouth of New River on the eastern side. A large accumulation of ballast near the west side of the inlet would support the historical site of the Wright Island saltworks (Angley 1982:3).

Despite its diversified economy, an out migration of population occurred during the early nineteenth century. This "Great Exodus" resulted in the loss of some of the largest and wealthiest landowners in the county. This move was driven by five factors: land grants for military service in the Revolution and War of 1812, availability of cheap land in the west, better cotton land in the west and south, higher prices elsewhere for hiring slaves and a decline in the productivity of the area's heavily farmed sandy soils (LBG 2002:9). As a result, Onslow County remained rural and was slow to develop, expanding by 1,840 residents in the 40-year period between 1820 and 1860 (Littleton 1981:122).

Although there was sufficient population to warrant establishing a United States post office at Wantland's Ferry in 1814, the town did not develop rapidly. As late as 1821, local newspapers carried advertisements to encourage the sale of lots laid off around the court house (*New Bern Sentinel*, 21 April 1821). It was not until two decades later, on 13 December 1842, that the North Carolina General Assembly authorized the town's incorporation and designation as Jacksonville in honor of Andrew Jackson. As the first commissioners of the town of Jacksonville failed to meet the qualifications for that office, the General Assembly dissolved the act of incorporation and passed a second on 27 January 1849 (Onslow County Historical Society 1983).

Although the early growth of Jacksonville was relatively slow, by 1830, large local industries (naval stores, salt works and shipbuilding) had developed along the banks of the New River and Onslow County. Because of its extensive pine forests Onslow County

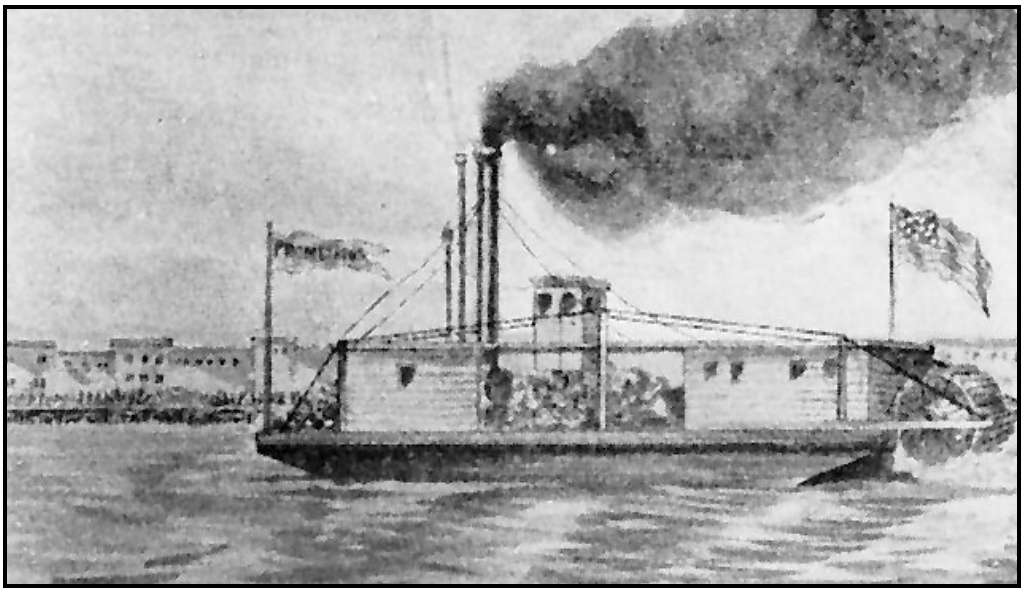

Figure 8. Illustration of the Swansboro-built steamer *Prometheus* (Watson 1995:51).

remained fourth in the state in production of naval stores. The value of its forest products rose from $16,000 annually in 1820 to approximately $219,000 by 1850 (Watson 1995:49-50). By the middle of the century, six steam turpentine distilleries and 24 tar and crude turpentine distilleries were in operation in Onslow County.

Shipbuilding factored as another important part of the economy during the nineteenth century. Between the American Revolution and the end of the War of 1812, the county produced 15 schooners, 6 brigantines and 3 ship-rigged vessels (Watson 1995:50). Swansboro shipwrights produced the majority of those vessels. New River builders were limited in the size of their vessels and scope of their operations by the shallowness of the New River bar, which rarely exceeded six feet of water. Construction continued to expand after the wars. Between 1815 and 1861, a total of 35 ocean-going vessels, 32 schooners, 4 brigs and 1 sloop were produced in Onslow County. Of those vessels, 16 were constructed by New River shipwrights. Steam vessels were also built in the area. In 1818, the stern-wheeled *Prometheus*, the first steamer built in the state, was constructed in Swansboro (Watson 1995:50-51). The vessel operated on the Cape Fear River until abandoned in 1825 (Figure 8). In 1836, the 199-ton side-wheel *David W. St. John* was constructed on New River and sold to Georgia interests for operation on the Savannah River.

The flow of commerce was assisted by the construction of a series of canals during the 1850s and improvements to navigation (*Weekly Wilmington Journal* 2 October 1845). In 1791, the North Carolina General Assembly incorporated the Commissioners of New River Navigation to raise funds for clearing the shoals at the mouth of the New River. The commission was reincorporated again in 1811 to clear the river from Sneads Ferry to the mouth and in 1816 the New River Canal Company was established to cut a channel

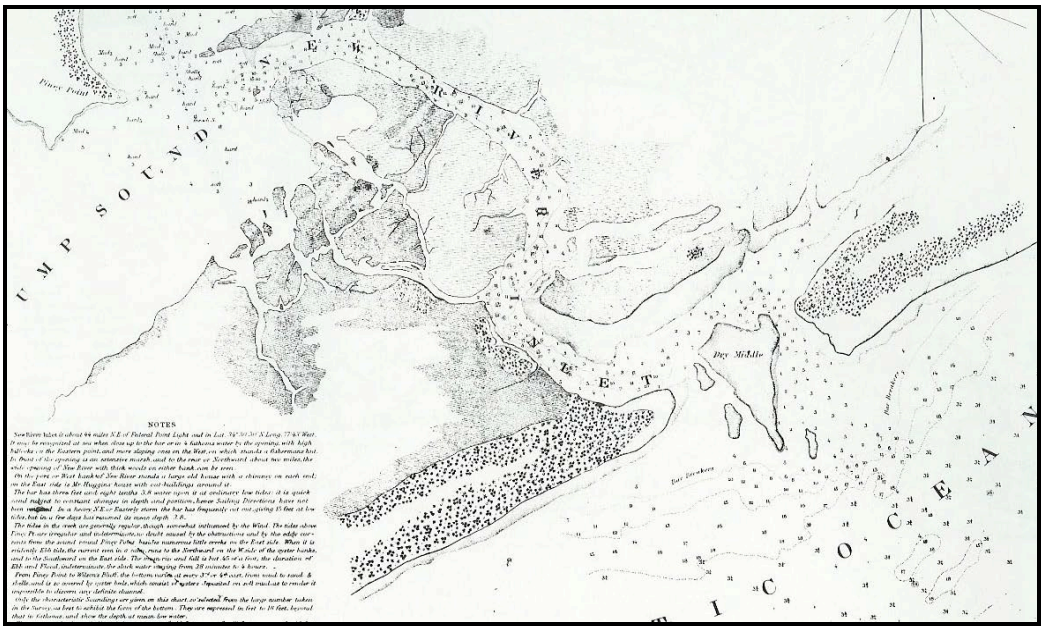

Figure 9. 1851 USCS map showing soundings of lower New River and New River Inlet (Guthorn 1984:111).

through the marsh at the mouth of the riverand to clear the river from its source (Watson 1995:53). These early efforts to improve navigation on the New River appear to have been ineffective.

After 1800, the North Carolina legislature appointed the Internal Improvement Committee to "promote and encourage private investments in transportation improvements." Although the committee's strategy to place a significant financial burden on private interests failed, the state did acquire stock in several river improvement companies. As a consequence, a small appropriation was made for the New River (White 2002:87-88). In 1836, 1837 and again in 1838, Congress appropriated funds to remove the oyster bank at the mouth of the river (Littleton 1981:124-125). A survey of the lower New River in 1850 revealed that the problematic oyster bar was still present.

Naval personnel acting for the United States Coast Survey (USCS) examined the bottom surface that extended from Piney Point due north to Wilson's Bluff in November 1851. Data from sounding lines indicated that: "the bottom varies ... from mud to sand & shells, and is so covered by oyster beds, which consist of oysters deposited on soft mud, as to render it impossible to discern any definite channel" (Guthorn 1984:111). Lieutenant John Newland Maffitt's reconnaissance of New River and New River Bar also recorded the hazardous conditions within New River Inlet (Figure 9). In addition, Maffitt described the area's coastal topography and some shoreline landmarks:

> New River Inlet is about 44 miles N.E. of Federal Point Light and in Lat. 34°30' 30" N. Long. 77°43'[0"] West. It may be recognized at sea when close up to the bar or in 4 fathoms water by the opening, with hillocks on

> the Eastern point, and more sloping ones on the West, on which stands a fisherman[‘]s hut. In front of the opening is an extensive marsh, and to the rear or Northward about two miles, the wide opening of New River with thick woods on either bank can be seen...The bar has three feet and eight tenths 3.8 water upon it at ordinary low tides: it is quick sand subject to constant changes in depth and position, hence Sailing Directions have not been verified. In a heavy N.E. Easterly storm the bar has frequently cut out, giving 15 feet at low tide, but in a few days has resumed its mean depth 3.8 (Guthorn 1984:111).

As a result of Maffitt’s findings, the 1851 river and harbor bill appropriated federal funds to resurvey the lower New River. According to a December 1851 edition of the *Wilmington Journal,* surveyors reported that the “sole obstruction which they had found at the mouth of the river was an oyster bed 600 yards long which they believed could be removed by a single engineer, a dredge boat, and two laborers working three months” (Littleton 1981:125). During 1852, the State of North Carolina incorporated two companies that expressed interest in those navigation improvements. Although several influential New River leaders were involved in both firms, no maritime improvements apparently occurred.

In 1855, the state legislature incorporated the New River Navigation Company [the second by that name]. Civil engineer S. Thayer Abert [or Albert] was retained to complete a preliminary survey and within one year, Captain William Weaver reported that a depth of five feet had been obtained at New River Inlet, with an ultimate goal of seven feet (Littleton 1981:125). However, by 1859, the project was abandoned and “the dredge and dumping boats had been laid aside and allowed to sink.” Subsequently, the state donated those vessels to the Town of Beaufort (Littleton 1981:125).

In 1856, a dredge was built in Jacksonville to improve and deepen the channels leading to the town. Within two years, Congress declared Jacksonville a port of entry and that act also provided federal assistance to conduct improvements in the New River (*American Advocate*, 28 September 1859). Although a channel that measured 1,975 yards long, 25 to 60 feet wide and 7 seven feet deep was excavated by 1857, the project was considered a failure (Watson 1995:54). Initiatives to construct canals between New River and Brown’s Inlet and New River and Swansboro also failed to accomplish their goals.

The American Civil War disrupted further development along New River. After Confederate forces in South Carolina attacked the U.S. garrison at Fort Sumter, President Abraham Lincoln declared a state of open rebellion and called for volunteers to preserve the Union. On 19 April 1861, Lincoln issued a proclamation to establish a blockade of Confederate ports in South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana and Texas. Eight days later, the blockade was extended to include ports in Virginia and North Carolina. In early May, North Carolina Governor John W. Ellis authorized the sinking of numerous vessels in Bear Inlet to deter Union penetration of that inlet (Littleton 1981:134).

In late September 1861, E. L. Perkins wrote Governor Ellis's successor [Henry T. Clark] that New River, Bear and Bogue inlets "were entirely defenseless and could easily admit vessels drawing 7 or 8 feet of water" (Littleton 1981:134). Union activities soon confirmed that Perkins's fears were well founded. The many salt works scattered along the coastal marshes and livestock grazing on the barrier islands offered easy targets for Union raids. On 17 December, sailors from the Federal barque *Gemsbok* landed near the mouth of the New River along the north banks. After they slaughtered cattle that grazed there, the men crossed New River and were observed on the south side of the inlet. From that position, the Union force boarded a small schooner anchored inside the mouth of the river (Littleton 1981:135).

The Union sorties in October and December 1861 clearly demonstrated the need for Confederate fortifications along the coast. To prevent similar raids, a small six-gun battery was constructed on the south side of Bogue Inlet on Huggins Island. In the interim between Secession and fortification of that island, the Confederate Military and Naval Branch created two departments of coastal defense for the state. The northern division extended from Norfolk, Virginia to New River, while the southern division extended from New River to the border with South Carolina. Despite the obvious military importance of New River Inlet, the modest measures taken to hinder Union strikes along the Onslow coast failed.

The fall of New Bern in March 1862 opened Onslow County to several incursions. In August, Union forces briefly occupied Swansboro on two occasions and on 23 November 1862 Lieutenant William B. Cushing led an expedition against Jacksonville. Although he was only nineteen years old, Cushing had recently taken charge of the USS *Ellis* due to his valor at the Battle of Blackwater River (Schneller 2004:44-45). The *Ellis* was stationed in the vicinity of Bogue Inlet to "intercept any Rebel trade" at Beaufort. However, tiring of the lack of activity near Bogue Cushing ordered the *Ellis* to New Topsail Inlet without first seeking authorization. At New Topsail, the *Ellis* seized the schooner *Adelaide,* loaded with 600 barrels of turpentine, 36 bales of cotton and some tobacco for Bermuda (Schneller 2004:46). Though chastised by superiors for leaving his station, Cushing's conduct during the *Adelaide* affair and his subsequent destruction of a large salt works near Topsail Inlet on 29 October 1862 led to a grant of carte blanche or a "roving commission" by Commander Henry Davenport, the senior naval officer in the North Carolina sounds (Schneller 2004:47).

Encouraged by the award of such an unusual directive, the *Ellis*'s commander turned his attention to a raid on Jacksonville. On 23 November, Cushing steamed into New River Inlet and proceeded to head 35 miles upriver to the county seat. His stated mission was "to sweep the river, capture any vessels there, capture the town of Jacksonville, or Onslow County Courthouse, take the Wilmington mail, and destroy any salt works that I might find on the banks" (The National Historical Society [TNHS] 1987 I, 8:230-231). At a point five miles above the mouth of New River, the *Ellis* encountered an outbound vessel, loaded with turpentine and cotton, that had been fired to prevent capture by Federal forces. By early afternoon, he reached Jacksonville, positioned pickets and

placed guards at all the public buildings. Within only 90 minutes, Cushing's naval unit captured 25 public weapons, a large quantity of mail, two schooners and slaves that belonged to the Confederate postmaster.

On returning down river, the *Ellis* paused briefly to shell an unidentified encampment on the banks. The gunboat was forced to stop again near the mouth of New River to silence rifles from the still burning schooner that had been encountered earlier in the day. At dusk, the *Ellis* anchored approximately five miles from the outer bar with its prizes to await the rising tide. At daylight, the vessel came under fire from Confederate artillery and during the ensuing exchange of gunfire the *Ellis* grounded hard on a shoal. Unable to free his ship and concerned by a possible attack, Cushing transferred everything "excepting the pivot gun, some ammunition, 2 tons of coal and a few small arms" aboard one of the prize schooners and order his men, except for six volunteers, to "drop down the channel out of range from the bluffs, and ... to wait for the termination of the impending engagement (TNHS 1987 I, 8:231-232). On the following morning, Confederate forces opened fire on the *Ellis* with heavy rifled guns that significantly damaged the vessel's engine and hull. Unable to save his ship, Cushing ordered the *Ellis* fired and retreated downriver in surfboats to the awaiting prize ships.

In 1864, Union forces conducted additional forays into coastal Onslow County. In March of that year, an expedition by 200 soldiers and 45 sailors from the USS *Britannia* and several smaller vessels was repulsed by Confederate fire at Swansboro while a smaller raid at Bear Creek resulted in the destruction of a schooner and the capture of a large number of slaves.

During early summer 1864, a joint Union army and navy expedition attempted to disrupt operations of the Wilmington and Weldon Railroad [W&WR]. Weldon was one of the chief railroad centers in the state and a vital military connection. On 20 June, the steamers USS *Calypso* and USS *Nansemond* departed from Beaufort and landed detachments from the Ninth Vermont Volunteers near New River to meet and cooperate with an inland army force (TNHS 1987 I, 10:169). Approximately 100 men were carried aboard four surfboats up the river near Swan Point, where they disembarked under the cover of darkness. Under the command of Captain Kelley, the "Volunteers" took possession of Snead's Ferry and captured a number of the Confederate pickets (TNHS 1987 I, 10:170-171).

However, on the following day, boats resupplying the detachment came under Confederate fire from Swan Point. Fearing that the point had been fortified with artillery Kelley's unit was evacuated. Unbeknownst to Union strategists, Confederate forces had received intelligence regarding the proposed sortie and had fortified the railroad. After being apprised of the armed guards, the Federals abandoned the attack recalling the two steamers back to Beaufort via Bogue Inlet (TNHS 1987 I, 10:169).

Though Onslow County was not a major blockade running center during the war, a number of vessels sought refuge along the coast to escape capture. The Union navy realized the potential for clandestine trade along that corridor and often inspected the

lower sounds of North Carolina. On 16 December 1863, a schooner was observed at the entrance of Bear Inlet by the USS *Mount Vernon* and the USS *New Berne*. The *Mount Vernon* anchored at the center of Bear Inlet and lowered boats for boarding the vessel. Acting Master E. W. White reported that, "[he] had scuttled and set fire to the *G. O. Bigelow*, her crew having run her aground and abandoned her a few minutes before they got aboard" (TNHS 1987 I, 9:344, 780).

On Christmas Eve, the USS *Daylight* and the USS *Howquah* left Beaufort to confiscate a large supply of salt that had been landed by the *G. O. Bigelow* and a cargo of naval stores that was ready for shipment prior to that vessel's destruction by the *Mount Vernon*. Though no naval stores were found three to four saltworks, 150 sacks of salt and a large number of empty barrels for turpentine were destroyed by the expedition (TNHS 1987 I, 9:375-376).

In February 1864, the 750-ton *Nutfield* stranded and burned at New River Inlet while running the blockade. Although the precise location of the shipwreck was not identified, an 1882 U.S. Army Corps of Engineers (USACE) report mentioned "the wreck of an old blockade runner" on the "eastern side of the inlet" (Angley 1982:4). In June of that year, another blockade runner, the *Pevensey*, was chased ashore on Bogue Banks while enroute to Wilmington.

Onslow County, like many other areas in the South, recovered slowly from the economic and social impacts of the war. One response to the economic collapse manifested itself through numerous public meetings. These gatherings were organized in Jacksonville to identify improvements that would encourage commerce along New River. As early as 1869, plans were formulated to secure a steamboat that would operate between Jacksonville and Wilmington. Proponents suggested that the vessel would be built in Delaware and commanded by Captain John N. Maffitt, the celebrated Confederate naval officer from Wilmington, North Carolina (*Morning Star* [*MS*] 11 June 1869).

Unfortunately for residents and commercial interests in Onslow County, that maritime venture did not materialize. A lack of navigable channels may have been one chief obstacle. In 1875, a Federal civil engineer reported about impediments to navigation in southeastern North Carolina that included the New River Inlet area. S. T. Albert noted that:

> Between Bogue Sound and Wilmington are five shallow sounds, with an occasional inlet, where coasters may find haven. These sounds…are for the most part occupied by an intricate network of channels through which a canoe cannot pass. The storms sweep into the sounds a large amount of sand which the feeble backwater is unable to remove, and large deltas have been formed by the ocean inside the inlets…Local testimony seems to indicate that the beach is washing away between New River and Masonborough, and some residents affirm that the beach has retreated as much as one-eighth of a mile in the last twenty years (Angley 1984:7).

Circa 1882, only seven schooners reportedly traded between markets at New River and Wilmington. Those coastwise vessels carried annual cargoes that totaled 20,000 barrels of naval stores and 1,500 bales of cotton plus shipments of peanuts, oysters, and fish. During the following year, a steamer commenced service between New River and nearby Morehead City (Angley 1982:4). At the same time, Onslow County's economic growth was also being fostered by an overall expansion of seafood industries. Trout and mullet were caught locally in great numbers and quickly developed into an important export commodity (*MS* 20 January 1878). Like the region's trout and mullet, New River oysters became popular as far away as New York and were exhibited in Boston during the Boston Exposition in 1883 (*Weekly Star* [*WS*] 28 September 1883). The New River Oyster Company was formed in 1890 to continue to foster development of the oyster industry in Onslow County (*WS* 21 November 1890).

The General Assembly incorporated the Eastern Carolina Piscatorial Association to promote the region's coastal resources during that same year (Watson 1995:90; *WS* 2 September 1892). Residents of Jacksonville and Onslow County also began to express considerable interest in agricultural development. Cotton rapidly became the county's principal crop, but as the sandy soils became depleted by the turn of the twentieth century area farmers switched to tobacco. A series of popular local agricultural societies were organized to promote development of the cash crop. The Onslow County Agricultural Society was formed for that purpose in Jacksonville during September 1872.

Formation of the agricultural and piscatorial societies corresponded with the arrival of the Wilmington, Onslow and East Carolina Railroad in December 1890. The railroad brought an influx of people into Jacksonville and more than 50 houses and a variety of new stores were reported under construction the following year (*WS* 9 January 1891). The railroad also provided long sought steamboat services for Jacksonville. The Onslow County Railroad Company initiated operations with the steamboat *Louise* in 1890 and placed the *George D. Purdy* in service in June 1894 (*Daily Review* 26 March 1890). The *George D. Purdy* was later purchased and operated by the East Carolina Piscatorial Association (*WS* 17 September 1897). Due to the popularity of local steamship and rail services, schooners all but disappeared by 1905 (Angley 1982:4).

Rail and steamer connections contributed to a revival of the lumber industry in the 1890s and a variety of mills were constructed in and around Jacksonville. The Onslow Lumber Company of Jacksonville made its first shipment of wood to Wilmington in August 1891 (*WS* 6 August 1891). In 1912, two additional mills were built near Jacksonville (*MS* 27 September 1912, 20 July 1919). Two years later a fourth mill had been established and Jacksonville mills were turning out several thousand dollars worth of cut lumber each week (*MS* 27 January 1914). While most of the lumber produced in Jacksonville was shipped to Atlantic coast ports for sale, a small amount was used to support local shipbuilding.

The naval stores industry, on the other hand, experienced a sharp decline during post war years. The volume of production dropped dramatically from a value of nearly $400,000 just before the war to $38,700 in 1870 (Watson 1995:89). This decline in production

lowered Onslow County's rank from fourth to eleventh in the state. Though the number of distilleries doubled between 1870 and 1880 production remained low and by the second decade of the twentieth century, the industry had all but disappeared.

An 1882 federal navigation report described the dynamic condition of New River Inlet during the last quarter of the nineteenth century. Engineer John P. Darling stated:

> The bar outside the inlet is constantly changing, the sand drifting during heavy winds. At the time of the examination the channel was on the west side of the breakers in front of the inlet, but was changing to the east near the wreck of an old blockade runner where the channel used to be a few years ago, as I am informed…. The inlet from the shore on the west to the long sand bar or beach on the east is 500 feet in width…. There is about 5 feet of water on the bar at ordinary low-tides…. Five of water can be carried from the inlet to the lower end of the oyster rocks, 7,000 feet, the same depth prevails in the channel, but it is only 50 feet in width, and very crooked, it having been cut so (I [Darling] think by the state) to avoid the worst rocks, they being visible on both sides at low water (Angley 1982:5).

As a consequence of Darling's findings, the USACE implemented a dredging project in 1886 when a cut was made through Cedar Bush Marsh and through Wright's Island. The first cut quickly deteriorated and was abandoned in 1894, but more work continued on the lower part of what is now call Western Channel to secure a four-foot deep channel. By 1905, an oyster shell dike was constructed at Western Channel and that construction helped to secure and maintain the 4-foot depth at low water (Angley 1982:5). Prior to 1900, dredges also extended a navigable channel [Swansboro to Beaufort] that had been constructed in 1880 to a point beyond the lower New River shoals (*WS* 21 November 1890).

New River boat building continued as a modest industry during the early decades of the twentieth century. The majority of that production focused on small vessels. By the turn of the century, gasoline began to replace steam powered vessels and construction turned away from commercial to fishing and pleasure craft. Local shipyards were located near Sneads Ferry and Marines on the New River. New River builders were known for a long-bowed skiff, specifically small boats rigged like skipjacks (Watson 1995:118). Despite the existence of New River shipyards, a 1916 report indicated that "no commerce whatever passed through the inlet [New River] to the sea" (Angley 1982:4).

In spite of the lack of local marine commerce, on occasion storms drove vessels passing offshore onto Topsail Island. On 7 September 1919, the Camden, Maine built merchant schooner *William H. Sumner* ran aground north of New Topsail Inlet (Figure 10). The *Sumner* was returning to New York from South America with a cargo of phosphate rock, mahogany and iron wood. Efforts to salvage the ship were abandoned when high waves

broke the keel but much of the cargo was saved. The remains of *William H. Sumner* were located by the Institute for International Maritime History during a survey carried out off Topsail Island in 1999 and 2000 (Tubby 2000 157-159).

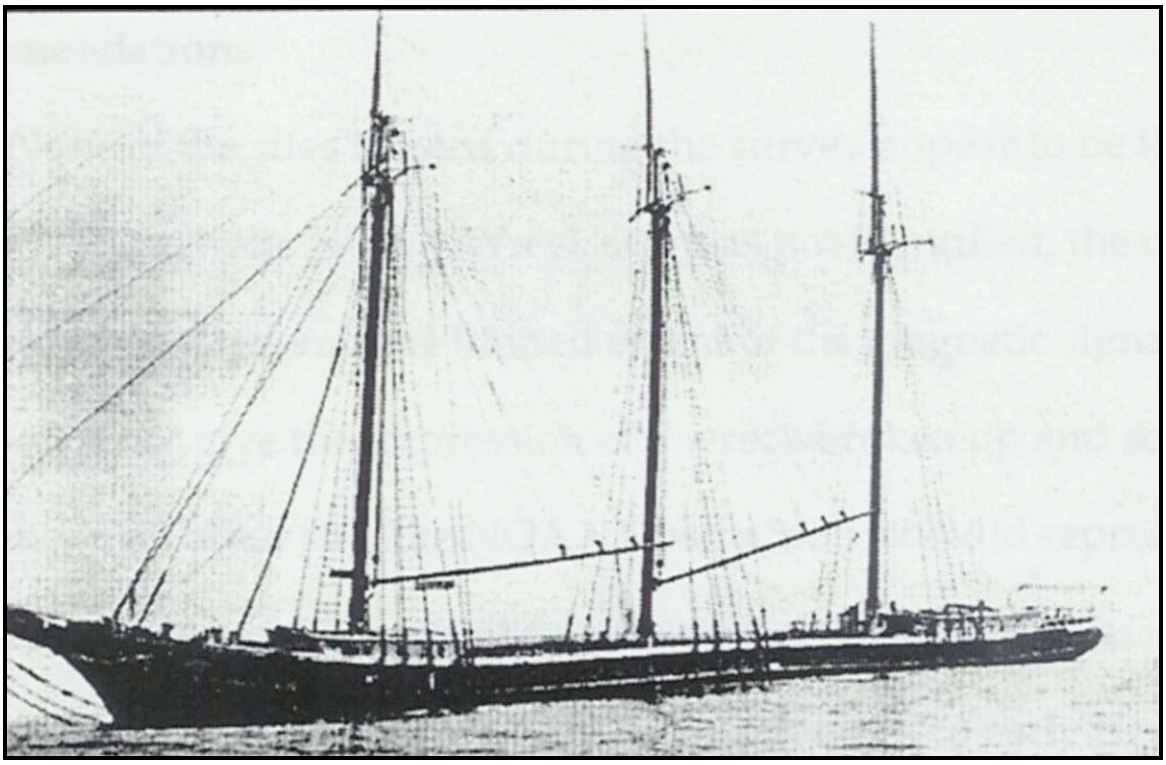

Figure 10. Photograph of the *William H. Sumner* aground off Topsail Island (Cape Fear Museum, Wilmington, N.C., Image Archive 1988.39.233).

Navigational improvements made during the twentieth century prompted changes in Onslow County. During the 1920s, construction began on the Intracoastal Waterway (ICW), a protected waterway traversing the entire eastern seaboard of the United States. It was hoped that the waterway would facilitate coastal trade and open areas of the coast that had little access to transportation outlets. Prior to 1930, Beaufort remained the southern terminus of the ICW. To the south of that North Carolina port, the waterway resumed at Winyah Bay, South Carolina. Federal legislation enacted during the late 1920s approved construction of a 93-mile long waterway between the port cities of Beaufort and Wilmington. The projected waterway was expected to increase shipments of "large quantities of lumber, seafood, fertilizer, petroleum products, and general merchandise through the intervening sounds" (Angley 1984:8). The segment that eventually passed through Onslow County was 12-feet deep and 90 feet wide. In 1938, six years after its completion, approximately 8,500 motor vessels, 200 barges and 300 tugs were crossing Onslow's waters within the ICW (Angley 1984:8; Watson 1995:117).

Overall, Onslow County was still rural in nature and did not contain any significantly populated towns until the 1950s. The economy was based on the same industries as the previous century, agriculture, lumbering and fishing. Naval stores industries dwindled by World War I. Small farms dedicated to tobacco production dominated the countryside. Other important commodities included corn, cotton, sweet potatoes, peanuts, peas, hay, apples and peaches (Watson 1995:112). During Reconstruction, tenancy became the principal method of farming and circa 1940, 41% of Onslow County's farms still operated by that method (LBG 2002:13). The seafood industry remained steady. Prior to World War II, there were some 25 trawlers in the county and many were locally constructed (Still 1983).

The county's transportation networks were expanded and modernized during this period. Though water remained the principal method of transportation a number of new and paved roads began to appear in the county, spurred by the introduction of the automobile. In 1924, Route 17 crossed through the county following the old Colonial Post Road and in 1934, Route 24 was completed. The railroads also expanded during this period. However, most catered to the lumber industry and were short in length, transporting timber directly to the mills for processing. Many of the lines could not compete against the expanding road system and were eventually discontinued.

Onslow County underwent a protracted economic decline at the close of World War I. Farm prices collapsed with the recovery of Europe and the removal of stimulus packages to aid the war effort. As a result, when the stock market crashed and the Great Depression came their overall impact was minimal. In 1933, the North Carolina Emergency Relief Administration provided Onslow County with some relief in the form of public works and farm relief. The Work Projects Administration [WPA] also assisted to provide local employment opportunities. One WPA project sponsored the construction of a Community Club House on the waterfront in Jacksonville.

Economic conditions improved slowly until World War II when the area was selected as the site for Camp Lejeune, the largest marine training facility in the United States. The New River site was selected by the military for its location, isolation and geography. Though the federal government made patriotic appeals for residents to sell their land, most refused and their land was acquired by condemnation. As a consequence, approximately 720 families were left homeless and destitute (Watson 1995:135). The U.S. military eventually received title to 173.8 square miles of land fronting both sides of New River (Littleton 1981:169). This acreage would expand to over 246 square miles with the addition of New River Marine Corps Air Station, Camp Geiger and other support facilities.

During World War II, at least 12 American tankers and freighters were sunk in Onslow Bay as a consequence of being torpedoed by German U-boats. The majority of those commercial vessels were lost during March and April 1942. Conversely, the 218-foot *U-352* was destroyed in the bay after being depth-charged by the USCG cutter *Icarus*

(Gentile 1992:193-209; Survivor Topsail 2005). After the global conflict ended, the establishment of the Marine Corps base at nearby Jacksonville began to stimulate commercial development in Jacksonville and other parts of Onslow County.

Because of the proximity of the marine base, the City of Jacksonville has developed into the largest commercial center in Onslow County. The area is home to active duty marines and their dependents, civil service employees, civilian employees and many retirees. Expansion of the Camp Lejeune Marine Corps training facility provided unprecedented support for Jacksonville and fostered growth that continues today. By 2001, Jacksonville's population has grown from 3,960 in the 1950s to more than 70,000 (Murrell and Murrell 2001:73).

The nature of activities along New River has changed due to improved inland transportation and other factors. New River boat-building enterprises declined by the mid-twentieth century, but some smaller yards like the Matthews Brothers Nethouse continued operations (LBG 2002:13). Today, private leisure and charter vessels transport "May parties" and "banks parties" up and down the river. According to sociologist John Mailio, a substantial channel-net fishery has also developed in the New River at Snead's Ferry during the last several years. His research on the North Carolina shrimping industry indicated that 50 to 60 vessels operate between New River and Swansboro and between New River and Topsail Beach (Maiolo 2004:41-42).

Development on Topsail Island

Topsail Island is a narrow 26-mile long island located between the ICW and the Atlantic Ocean and is the largest barrier island on Onslow Bay. The term Topsail Island was not in common use until 1971, when developer Edward Yow acquired property on the barrier island. Previously, the barrier island was called The Banks, Ashe Island, Sand Spit, Sears Landing or Long Island (www.Topsail.com). Prior to WWII military development, the island remained largely unspoiled.

During World War II, the United States Army moved a division of their anti-aircraft artillery school from Holly Ridge [Camp Davis] to a new camp located on this narrow island between New River Inlet and New Topsail Inlet. In order to alleviate transportation problems, the army installed a retractable 75-foot steel barge between the mainland and the island (OCHS 1983:24). Approximately 22 buildings, mostly of frame construction, were constructed on the island for personnel and equipment (TOCHS 1983:24). On 1 March 1942, the 514th Coast Artillery was activated at the camp for the "specific purpose of acting as a demonstration unit for the Coast Artillery Officer Candidate School" (Weinert and Arthur 1989:286-287). Gunnery practice areas were constructed at Sears Landing near a pontoon ferry site. Coastal defense guns were positioned on the beachfront so that army gunners could practice firing at targets towed offshore by small vessels. Due to the urgency of wartime requirements, resources at Camp Davis were rapidly mobilized. After the war ended, the base and personnel were demobilized just as quickly as the startup of its mobilization schedule (www.Topsail.com).

Although the army abandoned Camp Davis, the United States Navy retained its lease on the coastal portion of the base that included Topsail Island. Military activities quickly rebounded when the navy took charge on 1 June 1946. In order to conduct covert rocket experiments referred to as *Project Bumblebee*, the navy required a remote area. In conjunction with academic and technological support from the Kellet Corporation and John Hopkins University [Applied Physics Laboratory], the Navy Bureau of Ordnance built camera towers, roads, buildings, and a revised pontoon bridge for the secret missile test facility. According to historian William S. Powell, the project developed thus:

> A launching pad was built near the northern end of the island, and at regular intervals along the edge of the ocean seven tall, thick concrete towers were erected with apertures in which cameras were placed to record the passage of experimental rockets. When a rocket was fired, the cameras were activated by wires from the firing pad. A second-stage firing while it was in flight accelerated the rocket's speed, and the cameras were set to record it. After studying the film, scientists could make adjustments (Powell 1989:509-510).

Approximately 200 experimental rockets were fired from 1947 to 1948 on the 26-mile beach test range. When the airborne rockets exceeded the length of Topsail Island, the project and personnel were relocated to White Sands, New Mexico. Postwar missile experiments on Topsail Island led to the development of technology used in the *Talos* system. That naval shipboard system used a solid fuel booster in which the first stage accelerated the second stage to meet the critical velocity required by a ramjet [jet engine] second stage. Of equal importance, the rocketry tests eventually led manned space flights and a moon landing (Powell 1989:510; www.Topsail.com).

The contemporary architecture of Topsail Island is interspersed by several odd-shaped white concrete buildings that originated during the military's occupation on the island. Several other large buildings on the island are constructed with lumber from army and navy wartime and postwar federal structures. Private development of Topsail Beach began during the latter period. During the late 1940s, a bridge was constructed across the sound at the upper end of the beach and a roadway was built that extended to the mouth of New Topsail Inlet. The barrier island was eventually sold to real estate developers and to the towns of Surf City and Topsail Beach that were incorporated in the 1950s (Schoenbaum 1992:221).

By 1970, "a network of streets had been laid out and hundreds of cottages" and other buildings were situated on the island. Furthermore, extensive dock facilities were placed at the lower end of the beach that adjoin the mouth of New Topsail Inlet. In respect to navigational interests, a new marked channel provided direct access between that inlet and the ICW in addition to the "Old Banks" and Howard channels (Angley 1984:9).

Previous Archaeological Investigations

The earliest shipwreck investigations off Topsail Island were carried out by the North Carolina Division of Archives and History with assistance from the United States Navy. During the summer and fall of 1964, U.S. Navy divers salvaged material from a Civil War blockade runner identified as the *Phantom*. The wreck site had been located by John Foard and Hall Waters (Horner 1968:42-47). In 1975, the wreck was revisited by the staff and students of a field school in underwater archaeology operated by personnel from the Underwater Archaeology Unit for the University of North Carolina at Wilmington. Examination of the wreck confirmed that the vessel was an iron-hull, screw steamer from the Civil War period (Watts et al. 1975:115).

In May 1978, the fragmentary remains of a vessel (002 NWI) were found on West Onslow Beach. The wreck was reported to the Division of Archives and History by Mr. Keith Worth of Fayetteville. Leslie Bright of the UAU visited the site and examined the wreck with U.S. Marine Corps personnel on 21 May and identified the structure as a section of the hull of a small coasting vessel such as a schooner. The wreckage was located on the beach approximately 1/4 mile north of New River Inlet. Because the structure was considered to be a representative example of nineteenth century vessel construction, it was removed from the beach and delivered to Fort Fisher by the U.S. Marines (Bright 1978).

In August 1978, the remains of another small vessel (001 NWI) were reported to the UAU by Max Hill of High Point, North Carolina. Ballast, cultural material and wood fragments had been observed at the site as early as 1970 by Paul Miller of Milton, Wisconsin (Paul Miller to Richard Lawrence, personal communication, 27 September 1994). A one-day reconnaissance of the wreck site was conducted by Gordon Watts, Richard Lawrence, Dina Hill and several other members of the Fort Fisher staff on 18 August 1978. The wreck was located on the south side of the channel directly across from a black can buoy. Examination of the exposed remains indicated that the surviving structure was associated with a small nineteenth century vessel. Only a small fragment of deck structure approximately 3 feet in width and 12 feet in length was documented. The fragment included 2- and 3-inch-thick planks, beams, a hanging knee and possibly a fragment of a breast hook. The area around the section of deck was littered with ballast stones, shingle and scattered fragments of glass and ceramic material that suggested an antebellum date (UAU n.d.).

001 NWI was reexamined in August 1982 by Mark Wilde-Ramsing and Dina Hill of the UAU. Wilde-Ramsing and Hill confirmed that the site was the same as previously examined in 1978 and that there was a ballast scatter and exposed vessel structure located on the south side of the channel directly across from a black can buoy. A site sketch placed the hull remains immediately west of a grove of live oaks. The exposed hull remains measured approximately 75 feet in length and 17 feet in beam (Wilde-Ramsing

1982). Although rising tides prevented a detailed examination, Wilde-Ramsing concluded the structure consisted of the lower hull of a small sailing vessel (Wilde-Ramsing 1982).

In 1982, a second wreck (003 NWI) was documented in the immediate vicinity of New River Inlet. The vessel was investigated by the staff and students of East Carolina University's Program in Maritime History and Underwater Research (*Daily News*, 20 August 1982). Responding to a report of the exposed wreck provided by Swansboro historian Tucker Littleton, a two-day reconnaissance of the wreck site was carried on 18 and 19 August 1982. Examination of the exposed remains confirmed that the vessel was a small late nineteenth century schooner. Little of the hull above the turn of the bilge survived and the bilge was filled with ballast stones and scattered with fragments of glass and ceramic material. The keel measured 56 feet and the maximum surviving beam measured 18 feet.

In 1988, personnel from the United States Army Corps of Engineers (USACE), Wilmington District carried out a magnetometer survey of a proposed borrow area inside New Topsail Inlet. While no anomalies were identified in the borrow area, a large target was found offshore. Aerial photographs confirmed a large object exposed on the bottom that corresponded to the remains of the steamer identified as Phantom (Hall 2005:14).

A remote sensing survey of the ocean front along West Onslow Beach was carried out in 1997 by personnel from UAU and the Institute for International Maritime Research. The survey was designed to locate the remains of the Civil War blockade runner *Nutfield*. That British steamer was reported to have stranded and been destroyed in the immediate vicinity of New River Inlet in February 1864. The survey covered the inshore area between the shoals north of New River Inlet and the West Onslow Beach pier. No evidence of the *Nutfield* was identified during the investigation (Watts, personal communication 2005).

The remains of an early twentieth-century vessel were identified by the Institute for International Maritime Research of Washington, North Carolina in 2000. The wreck was identified during a survey of a six square mile area along the Topsail and Lea islands shoreline designed to determine if the Spanish ship *El Salvador* had wrecked off Old Topsail Inlet in 1750. While the *El Salvador* was not located, the remains of the twentieth century wreck were identified as the Camden, Maine-built schooner *William H. Sumner*. The *Sumner* wrecked off Topsail on 7 September 1919 (Tubby 2000:157-159).

The most recent investigation was carried out by Mid-Atlantic Technology and Environmental Research, Inc. (MATER) for the USACE, Wilmington District. MATER carried out a magnetometer and side-scan sonar survey of seven borrow sites off Topsail Island between October 2004 and May 2005. That investigation determined that there were no submerged cultural resources in the borrow sites (MATER 2005:20).

Description of Findings

North Topsail Beach North Borrow Area

Analysis of the acoustic remote-sensing data from the North Topsail Beach north borrow area identified no cultural material exposed on the bottom surface (Figure 11). Analysis and contour plotting of the magnetometer data confirmed that no cultural material generating a magnetic anomaly was present in the borrow area (Figure 12).

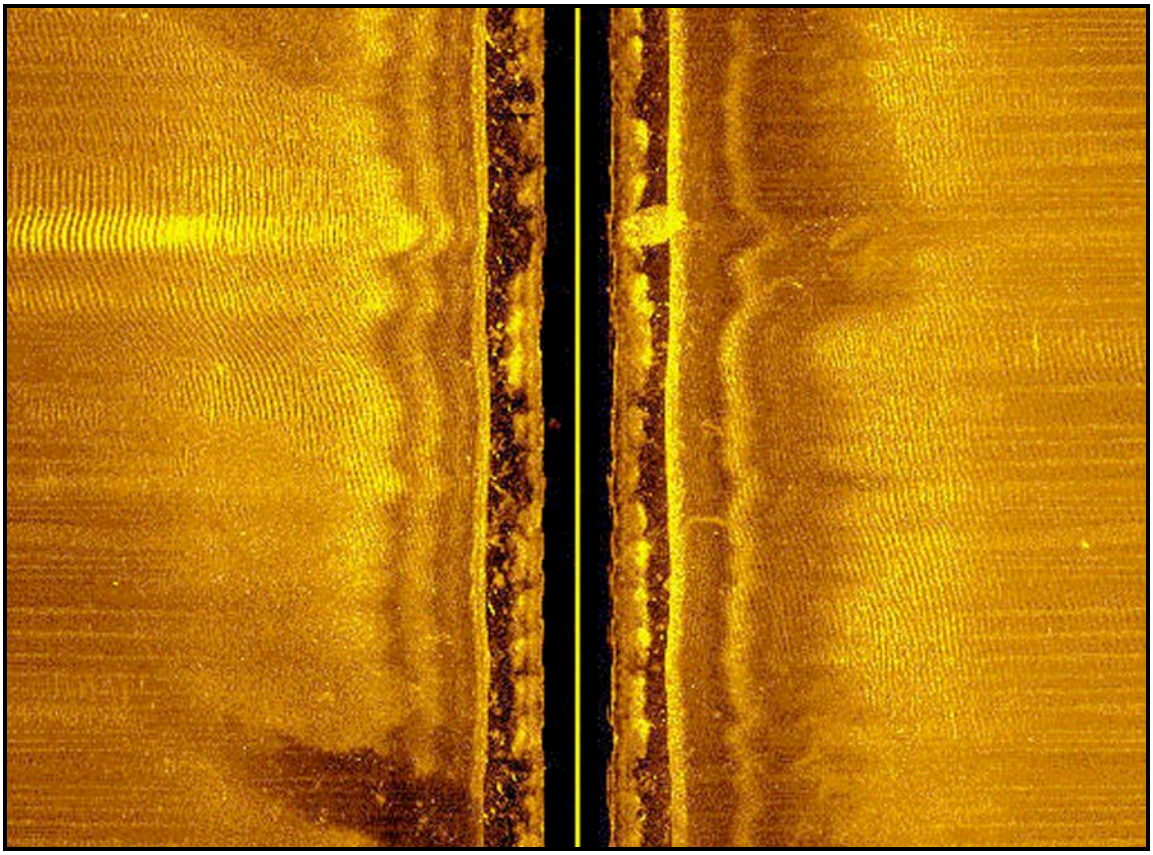

Figure 11. Sonar image of the bottom surface in the North Topsail Beach North Borrow Area.

Analysis of the acoustic remote sensing data from the North Topsail Beach south borrow area identified no cultural material exposed on the bottom surface (Figure 13). Analysis and contour plotting of the magnetometer data confirmed that no cultural material generating a magnetic anomaly was present in the borrow area (Figure 14).

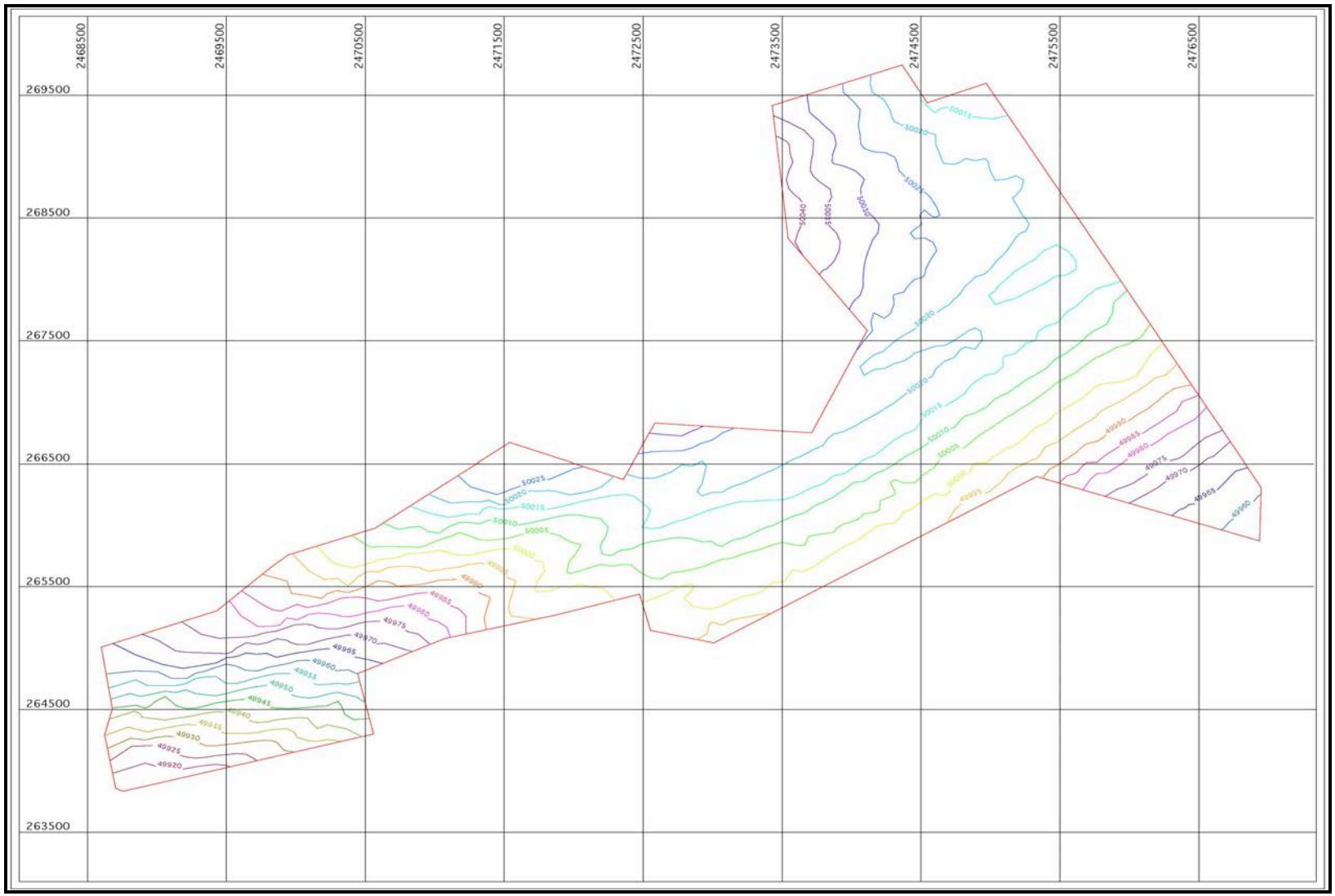

Figure 12. . Magnetic contour map of the North Topsail Beach North Borrow Area.

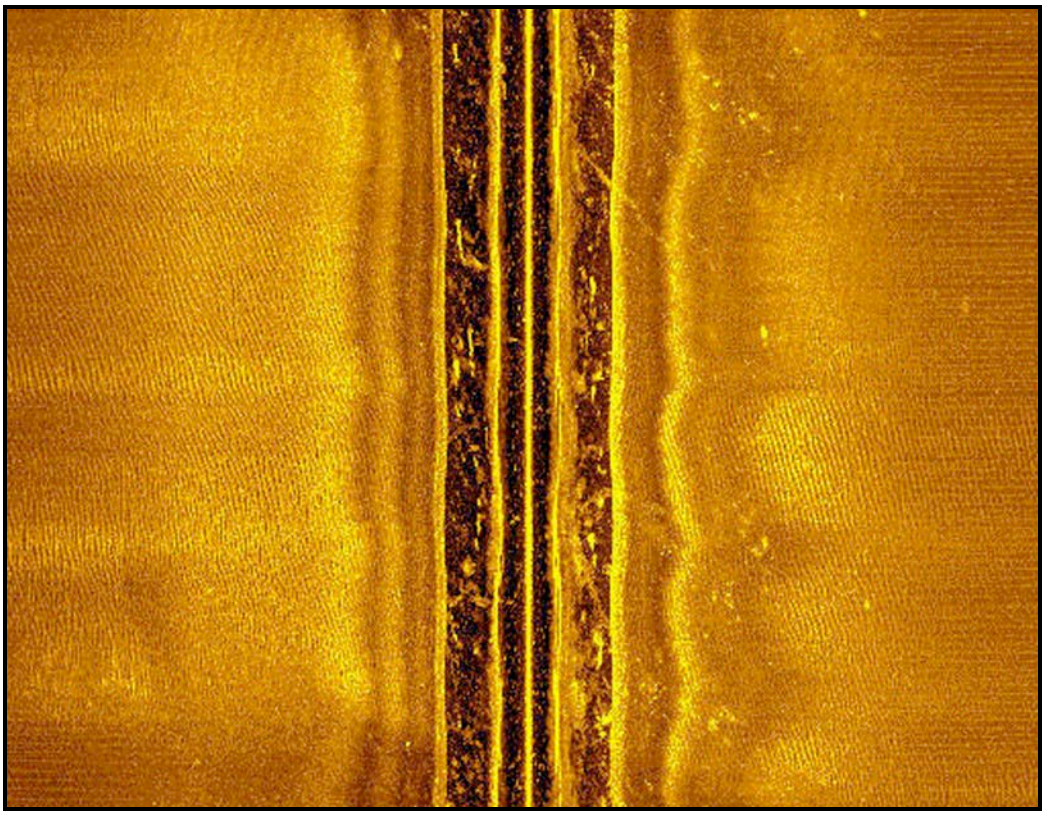

Figure 13. Sonar image of the bottom surface in the North Topsail Beach South Borrow Area.

Conclusions and Recommendations

A survey of historical and archaeological literature and background research confirmed evidence of sustained maritime activity associated with the Topsail Island and New River Inlet area. Documented transportation activities in the vicinity of Topsail Island and neighboring waterways date from the second half of the sixteenth century. New River became a focus for European activities as early as 1524 when the Italian navigator and explorer Giovanni da Verrazzano dispatched a small group to meet Indians somewhere between New River and Bogue inlets. Settlement along the banks of New River began during the second decade of the eighteenth century. Though strategically positioned along the main thoroughfare between New Bern and Wilmington, Onslow County grew very slowly. The region's poor soils retarded agricultural development and the shallowness of New River Inlet's bar hindered navigation and trade. New River became a small shipbuilding center during the late eighteenth to early nineteenth century but the shallow bar limited construction to shallow draft coastal vessels.

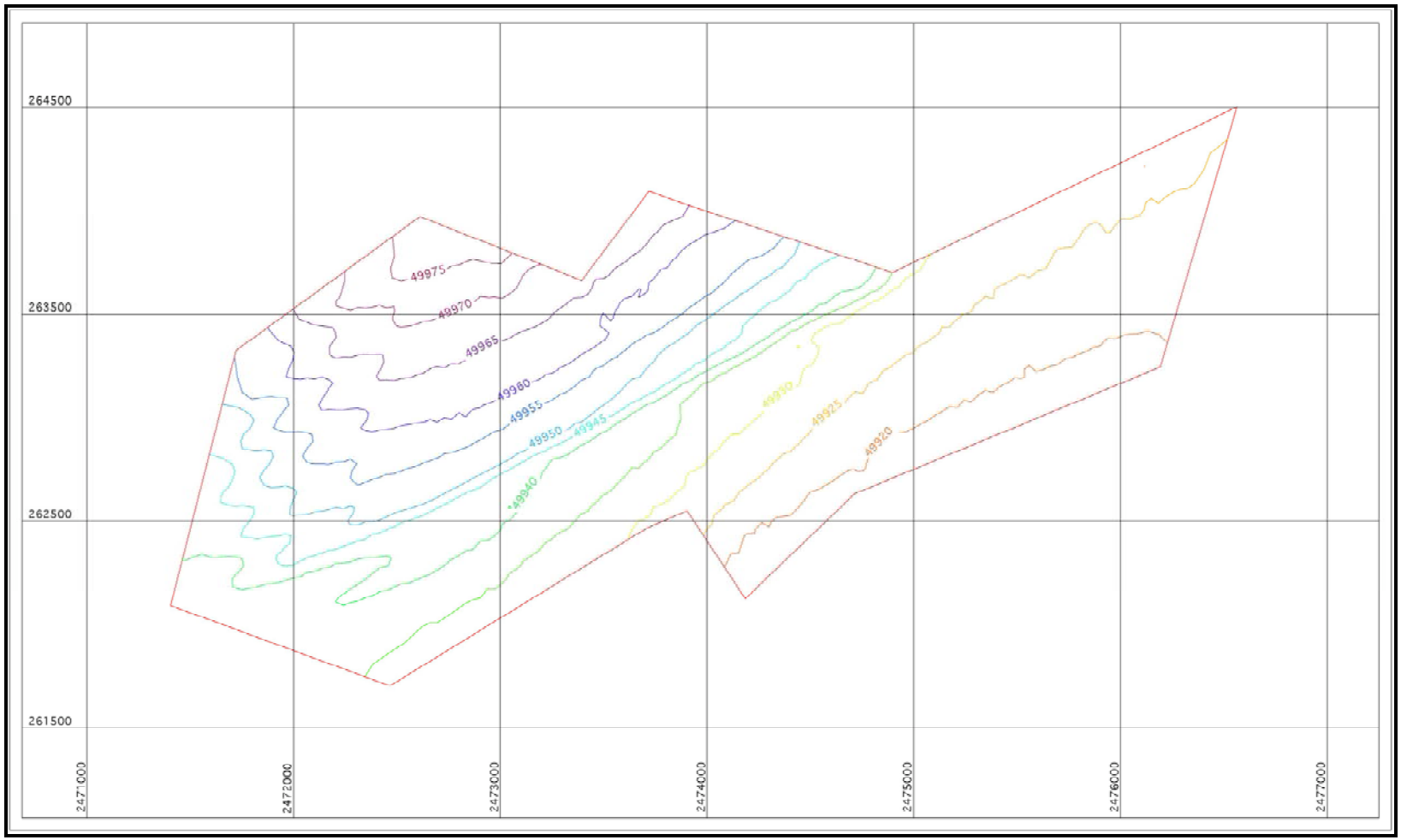

Figure 14. Magnetic contour map of the North Topsail Beach South Borrow Area.

The region remained a relative backwater until the establishment of Camp Lejeune during World War II. The presence of the marine base, which straddles both sides of New River, limited modern development along the river and West Onslow Beach. However the Topsail Island coast lies adjacent to the avenue of North Carolina coastal trade. Offshore Onslow Bay lies immediately west of the Atlantic shipping routes between Cape Fear in the south and Cape Lookout to the north. The previously identified area shipwrecks testify to the fact that the area must be considered as one of high sensitivity for submerged cultural resources.

As a consequence of nearly 400 years of navigation in the coastal region of Onslow County and settlement along the banks of New River since the eighteenth century, there is a high probability that historically significant submerged cultural resources are located in the area. While no shipwrecks in the project vicinity have been listed on the *NR,* previously identified vessel remains document that they exist; there are at least 25 shipwrecks recorded in the coastal waters off Topsail Island (Appendix A). Because of their association with the broad patterns of North Carolina history, the remains of sunken vessels preserve important information about the maritime heritage of the North Carolina coast.

In spite of that high probability, no submerged cultural resources were identified in the two North Topsail borrow area sections. The portion of the proposed North Topsail Beach Borrow Area previously surveyed and cleared by MATER was also found to have no anomalies (MATER 2005:20). The investigations carried out by TAR and MATER provided coverage of the entire North Topsail Beach Borrow Area (Figure 15).

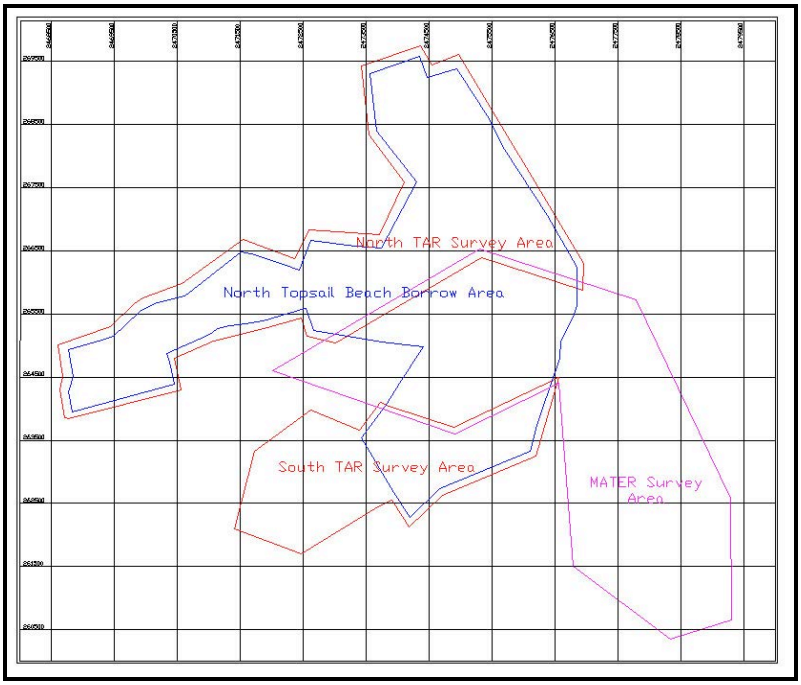

Figure 15. North Topsail Beach Borrow Area showing location and extent of TAR 2007 and MATER 2004/2005 surveys.

As no evidence of submerged cultural resources were identified by either survey, no additional investigation is recommended in conjunction with the proposed project. Analysis of the TAR survey data and review of the 2005 MATER report confirms that no submerged cultural resources will be impacted by excavation of the proposed borrow area.

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Appendix A

Known Shipwrecks Near Topsail Island, North Carolina

Name	Type	Tons	Built	Date Lost	Cause & Location
Unknown	Unknown			July 1737	Sank near mouth of New River
Sarah	Sloop			December 1747	Bear Inlet
Unknown	Sloop			July 1752	Bear Inlet
Henrietta	Sloop			December 1764	Bear Inlet
Unknown	Schooner			April 1765	Below Bear Inlet
Unknown	Sloop			December 1765	Near New River
Sally	Schooner			March 1799	East side of New River Bar
Seaman	Schooner			March 1837	Cast away at New River Inlet
Unknown	Schooner			September 1815	Mouth of New River
Pulaski	Side-wheel Steamer	687	1837	June 1838	Exploded at New River Inlet
Marchioness of Bute	Ship			January 1853	Near Bear Inlet
Albion	Schooner			March 1858	Inside New River Bar
Multiple Unknown	Unknown			September 1861	Scuttled by state at Bear Inlet to protect from Union vessels
USS *Ellis*	Side-wheel Steamer	100		November 1862	Burned near mouth of New River. Salvaged October 1867
Nutfield	Side-wheel Steamer	403	1863	February 1864	Burned at New River Inlet
Unknown	Schooner			March 1864	Burned at Bear Creek by Union forces
G.O. Bigelow	Schooner	90		December 1864	Destroyed at Bear Inlet by Union forces
Unknown*	Unknown			1880	Stranded at mouth of New River
Lorenzo	Schooner			August 1880	New River Bar
Unknown	Unknown			1881	Stranded at mouth of New River
Unknown	Unknown			1884	Stranded at mouth of New River

Unknown	Unknown			1890	Stranded at Bear Inlet
Unknown	Unknown			1890	Stranded at New River Inlet
Unknown	Unknown			1894	Stranded at New River Inlet
Morris and Cliff	Schooner	132	1890	January 1926	Lost approximately one mile west of Brown's Inlet

***According to Littleton (1981), this unknown vessel could have been the schooner *Lorenzo* lost August 1880.**

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